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Tatomir

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(54) **SHARPENING SYSTEM FOR ICE SKATE RUNNERS**

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B24B 3/00 (2006.01)
B24B 17/02 (2006.01)

(52) **U.S. Cl.**
CPC ***B24B 3/003*** (2013.01); ***B24B 17/02*** (2013.01)

(58) **Field of Classification Search**
CPC B24B 3/003; B24B 3/00; B24B 17/02
USPC 451/237, 45, 383; 76/83
See application file for complete search history.

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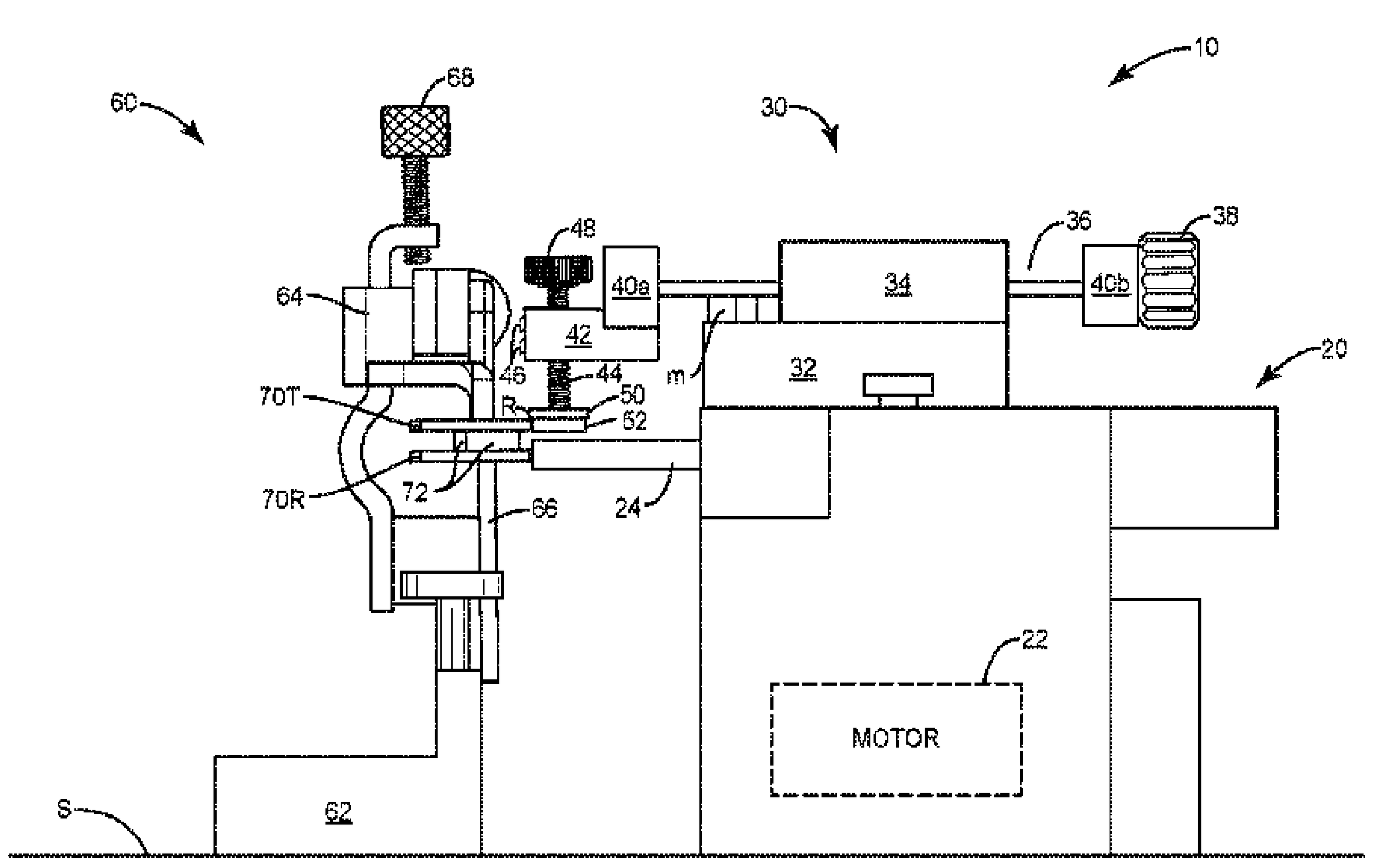
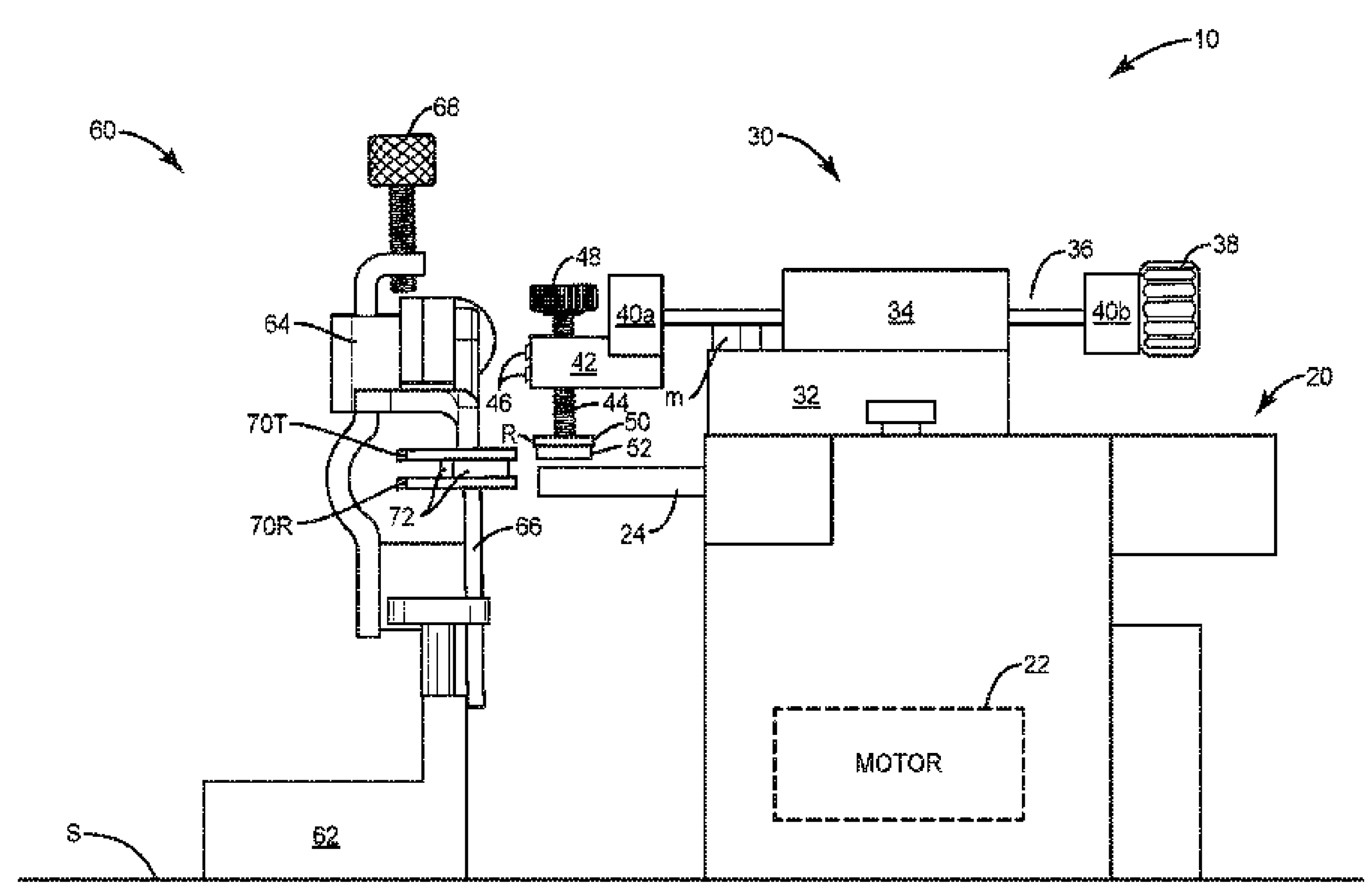
(57) **ABSTRACT**

A skate sharpening system comprises an adjustor assembly and a skate holder assembly. A runner is releasably coupled to a template runner, and then clamped into the skate holder assembly. The template runner defines a pre-defined profile for the blank runner. An operator moves the skate holder assembly such that the template runner moves along a guide bearing of the adjustor assembly. The guide bearing is disposed proximate a grinding wheel. While the template runner remains in contact with the adjustable guide bearing, the runner remains in contact with, and moves along, the grinding wheel such that the grinding wheel simultaneously sharpens and contours the runner.

16 Claims, 13 Drawing Sheets





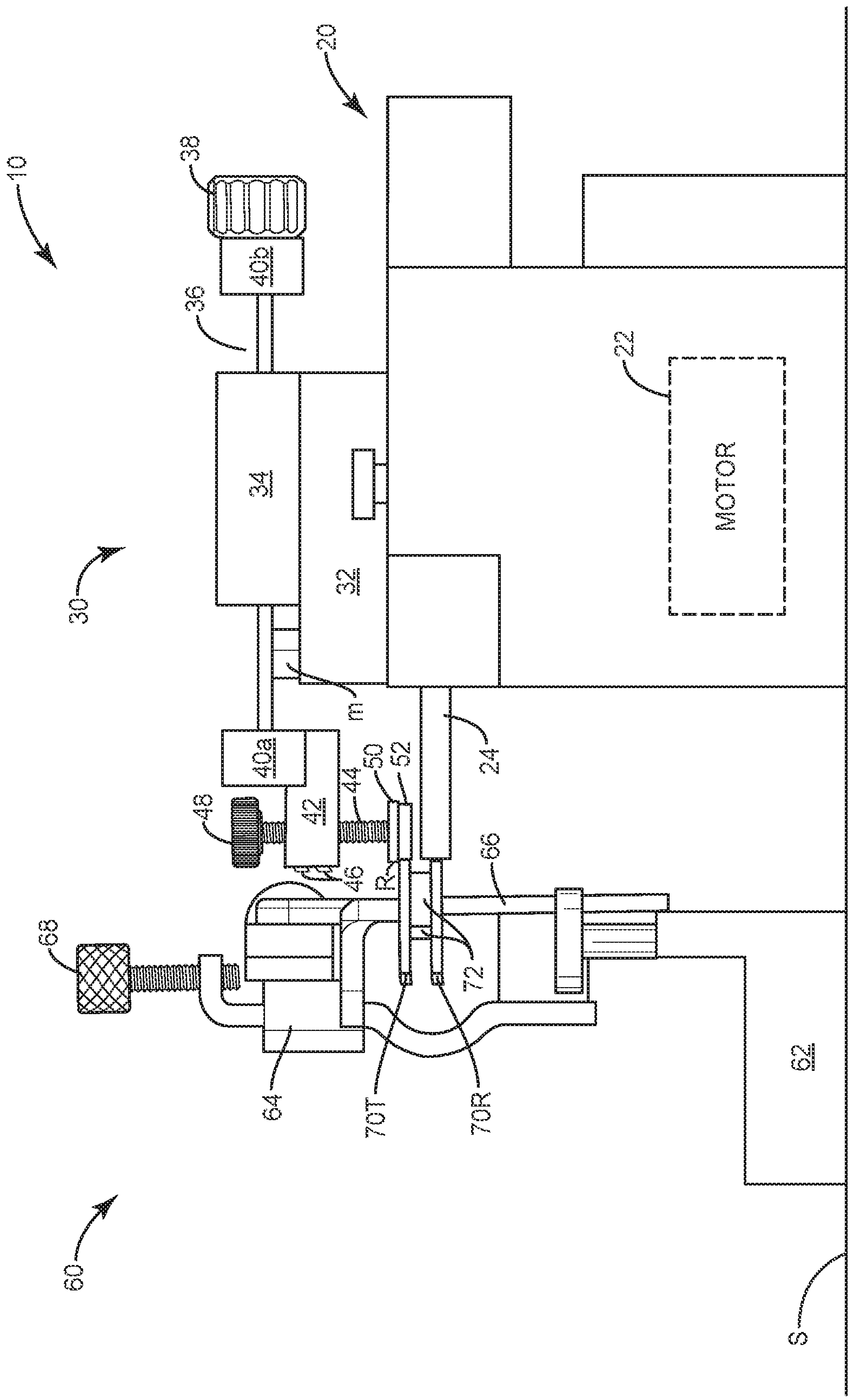

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FIG. 1A

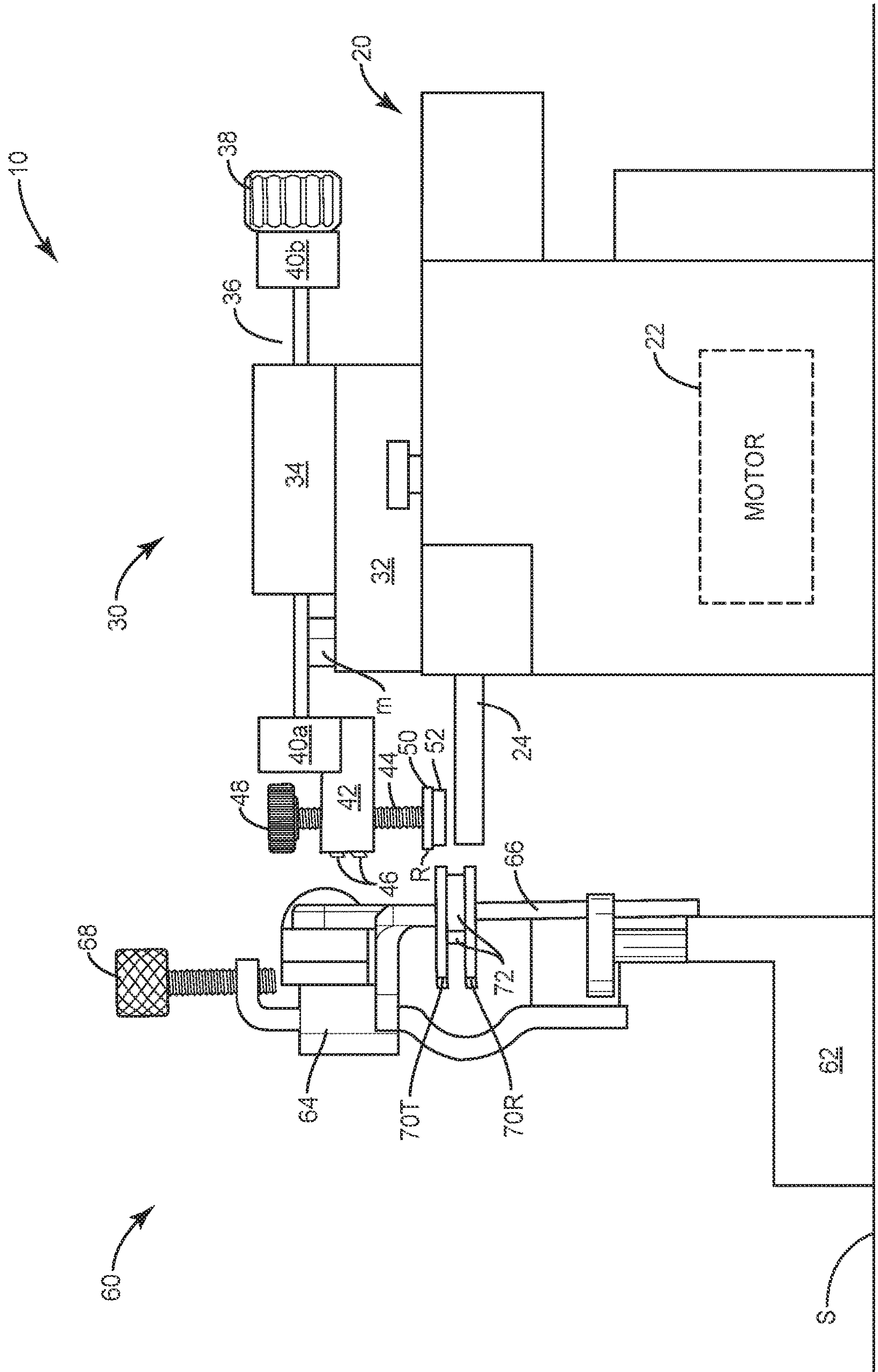
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FIG. 1B

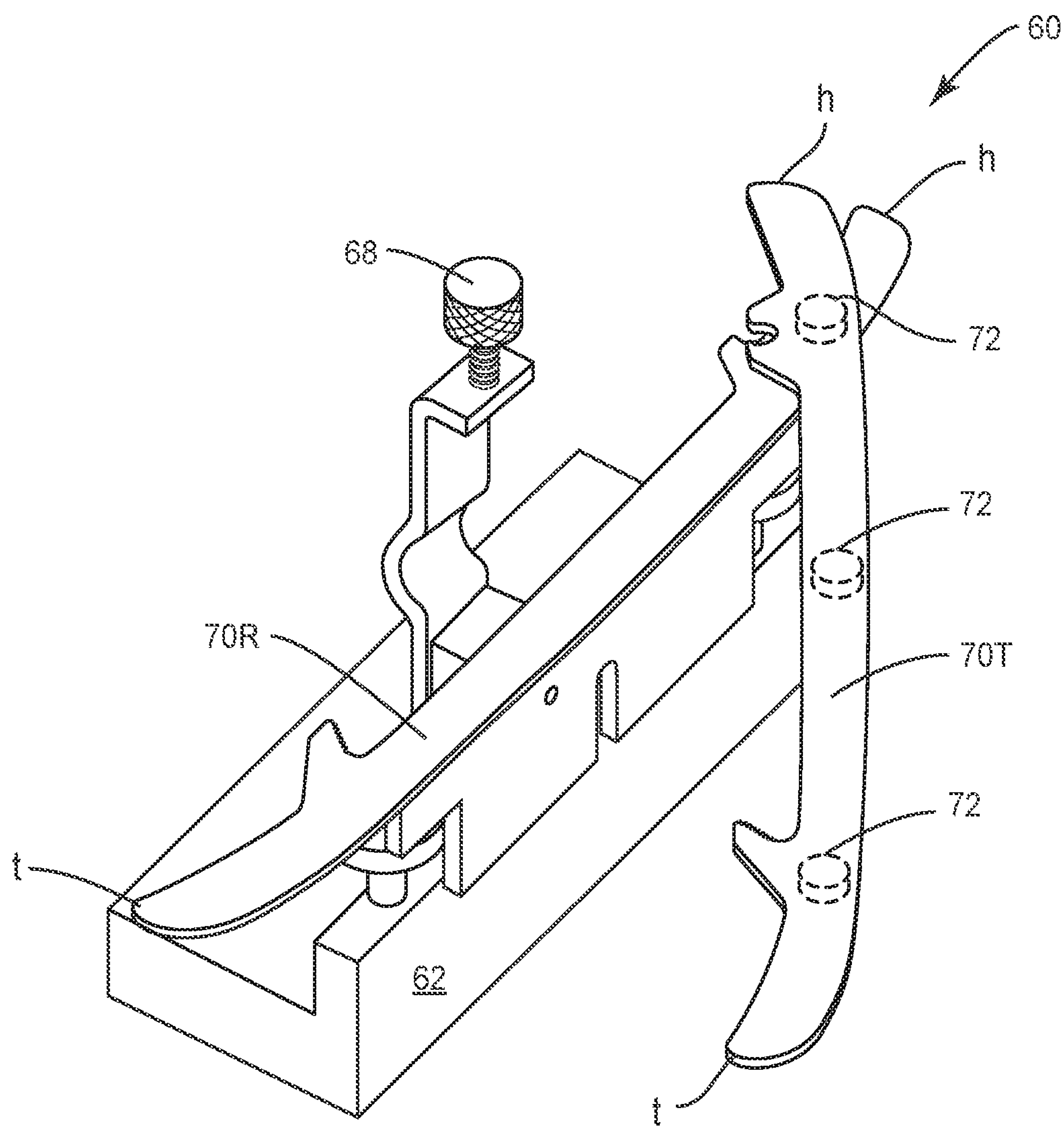

FIG. 1C

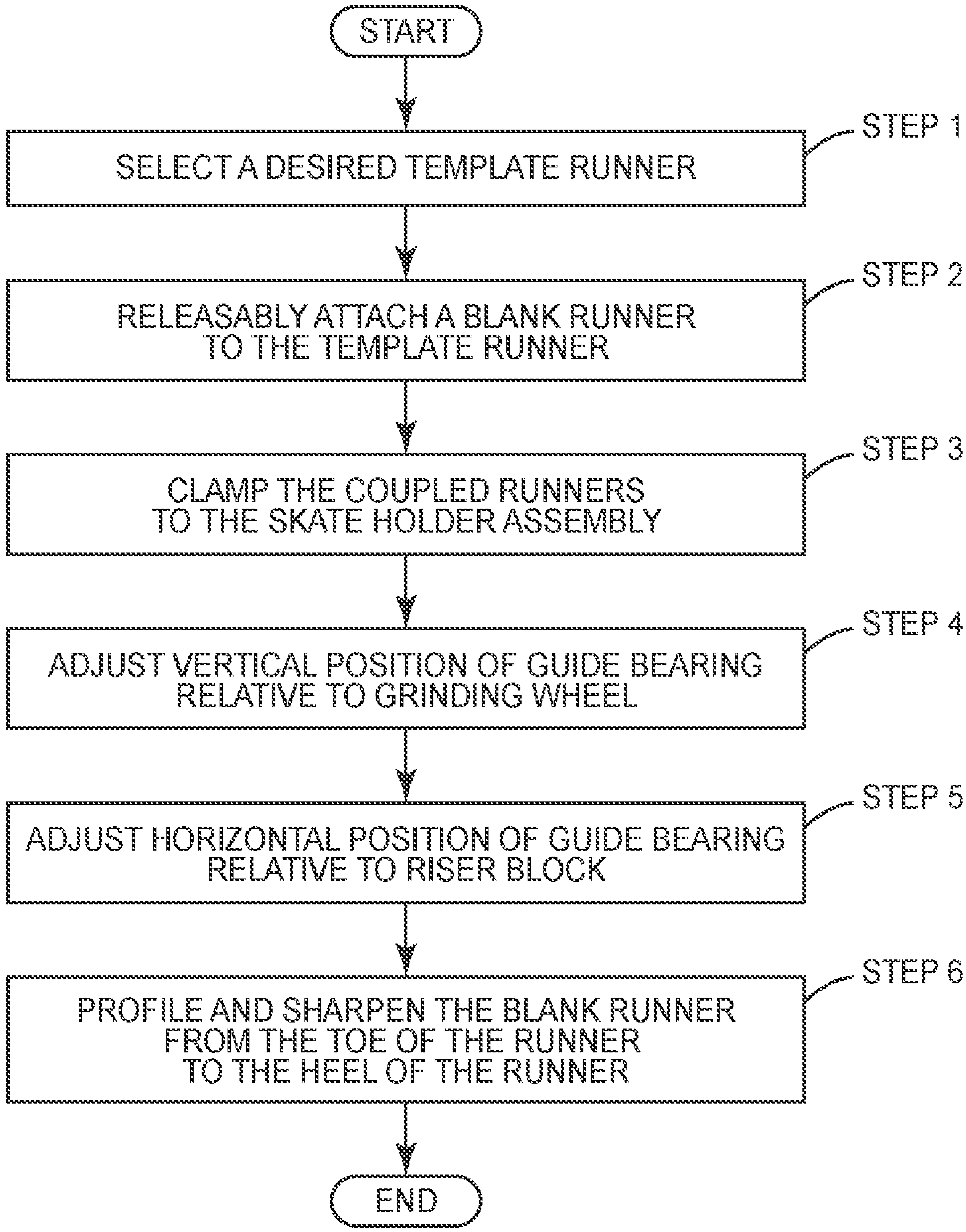
START
SELECT A DESIRED TEMPLATE RUNNER
STEP 1
RELEASABLY ATTACH A BLANK RUNNER TO THE TEMPLATE RUNNER
STEP 2
CLAMP THE COUPLED RUNNERS TO THE SKATE HOLDER ASSEMBLY
STEP 3
ADJUST VERTICAL POSITION OF GUIDE BEARING RELATIVE TO GRINDING WHEEL
STEP 4
ADJUST HORIZONTAL POSITION OF GUIDE BEARING RELATIVE TO RISER BLOCK
STEP 5
PROFILE AND SHARPEN THE BLANK RUNNER FROM THE TOE OF THE RUNNER TO THE HEEL OF THE RUNNER
STEP 6
END

FIG. 1D

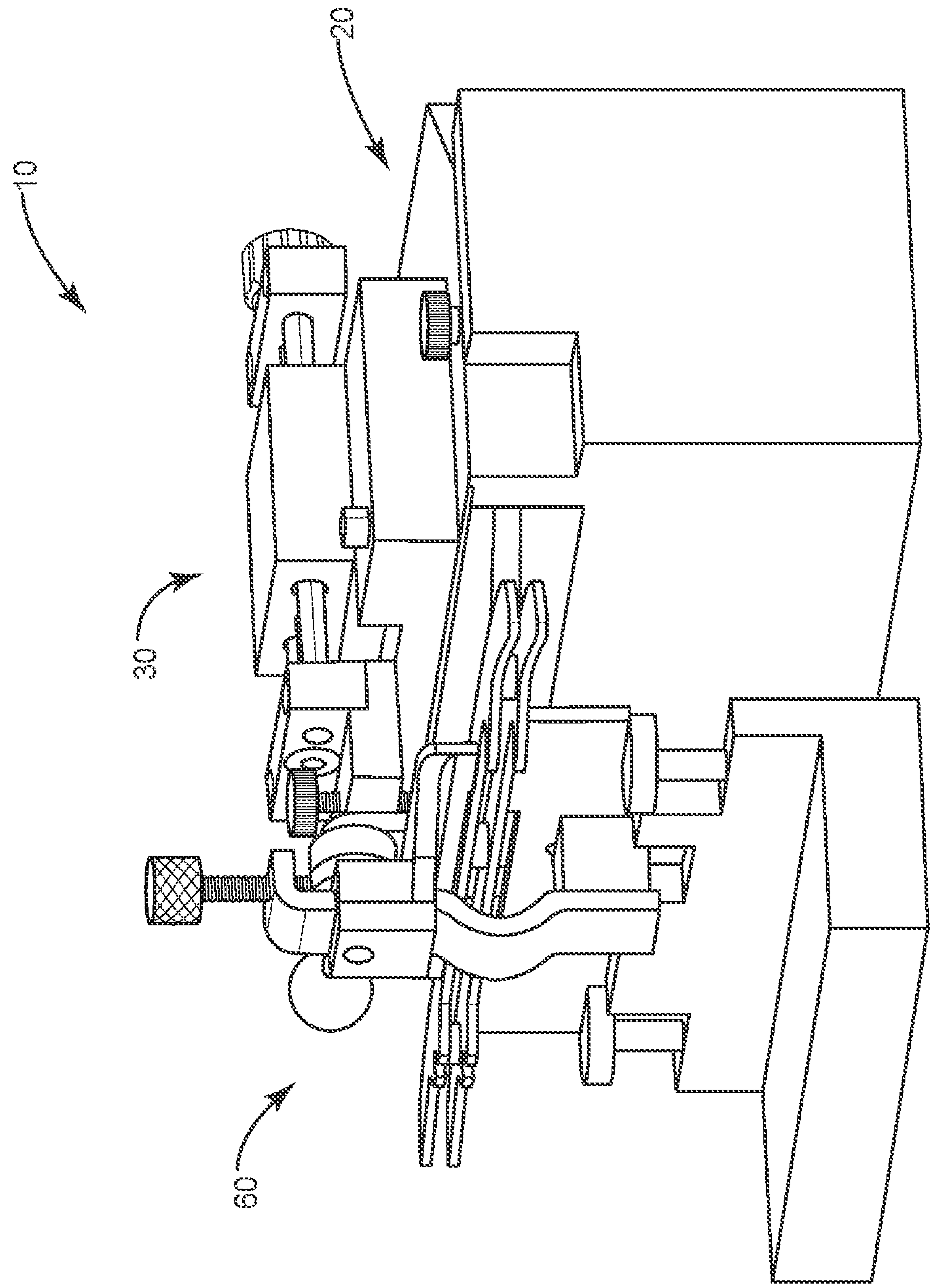

FIG. 2A

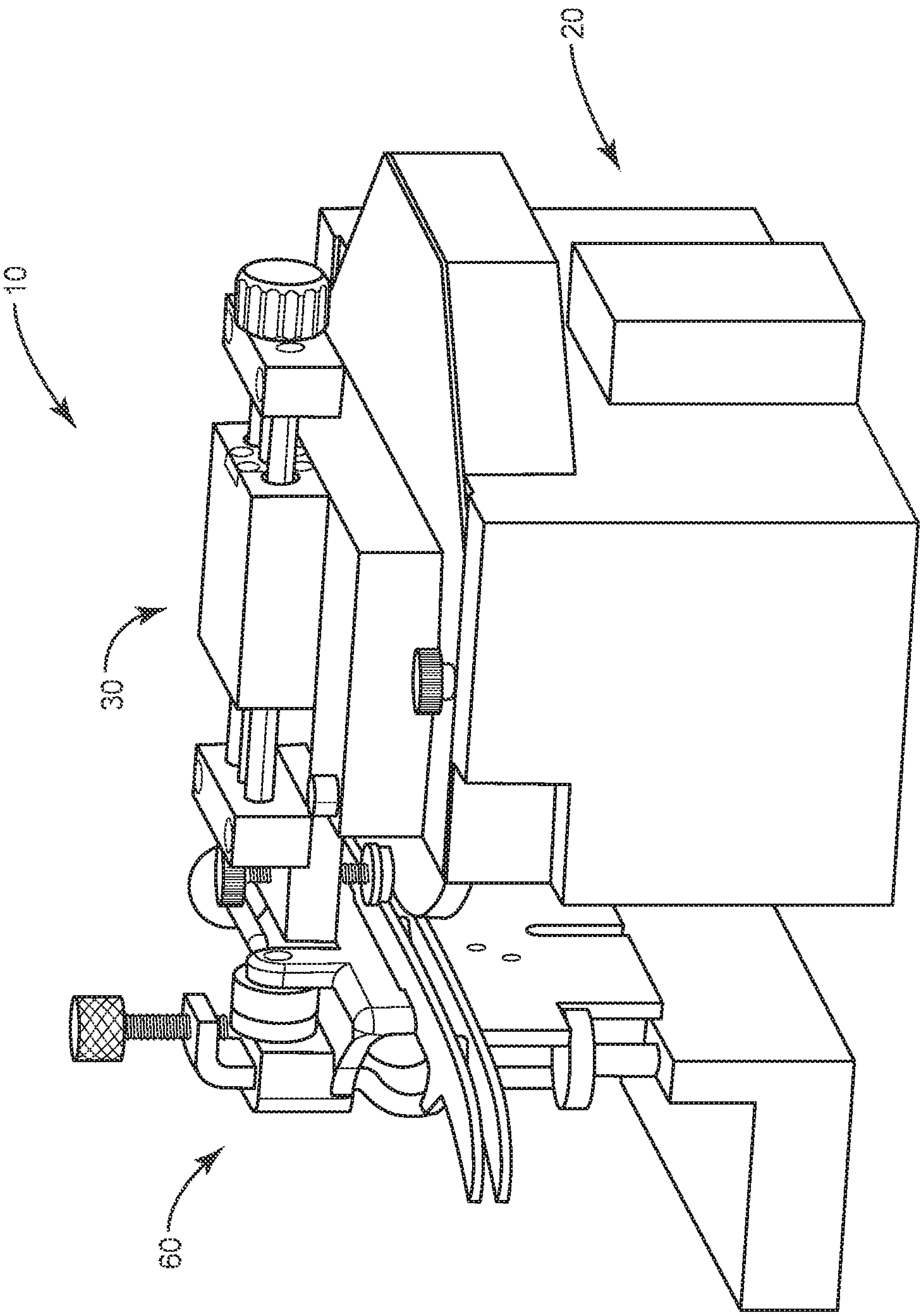

FIG. 2B

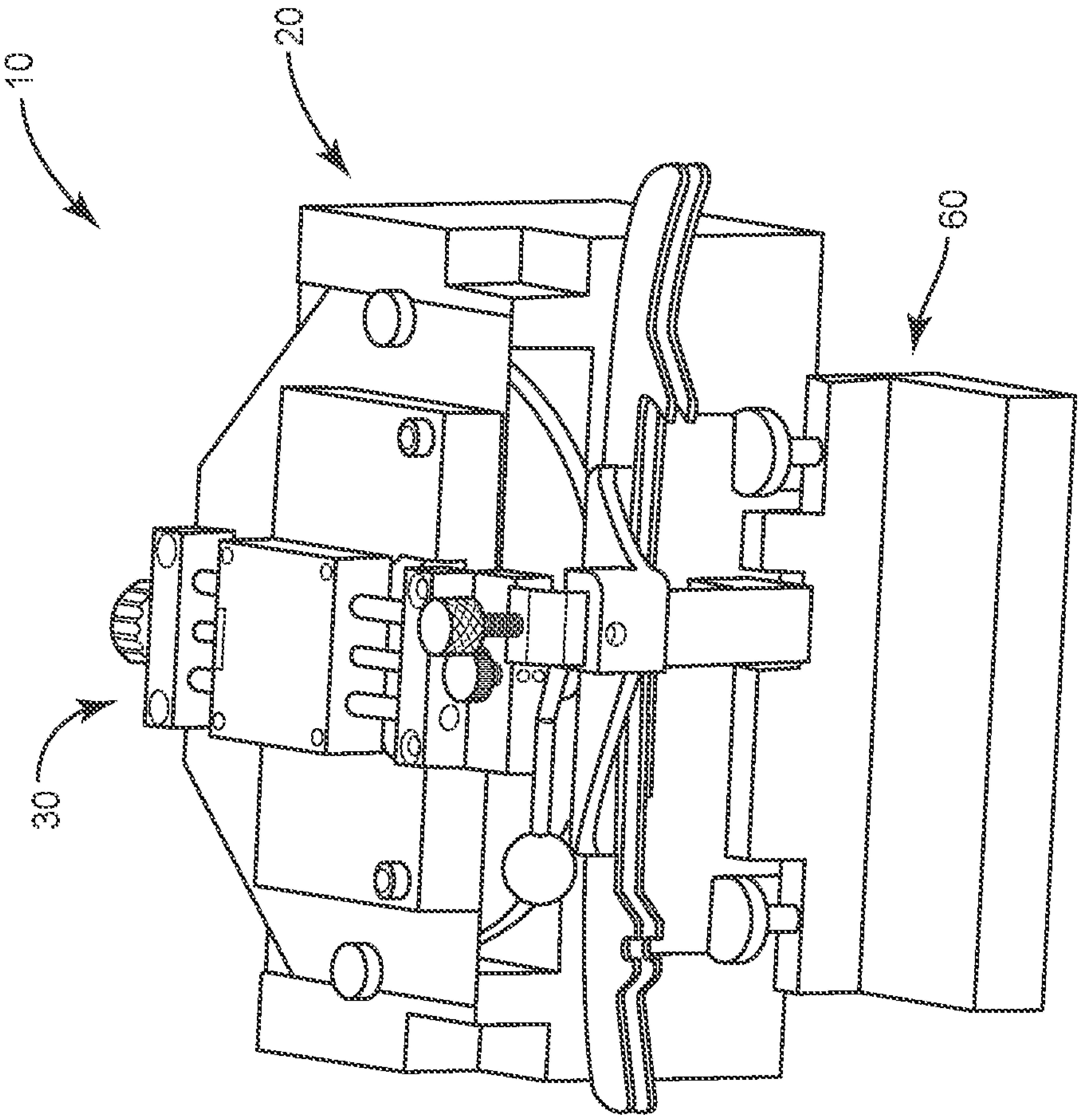

FIG. 2C

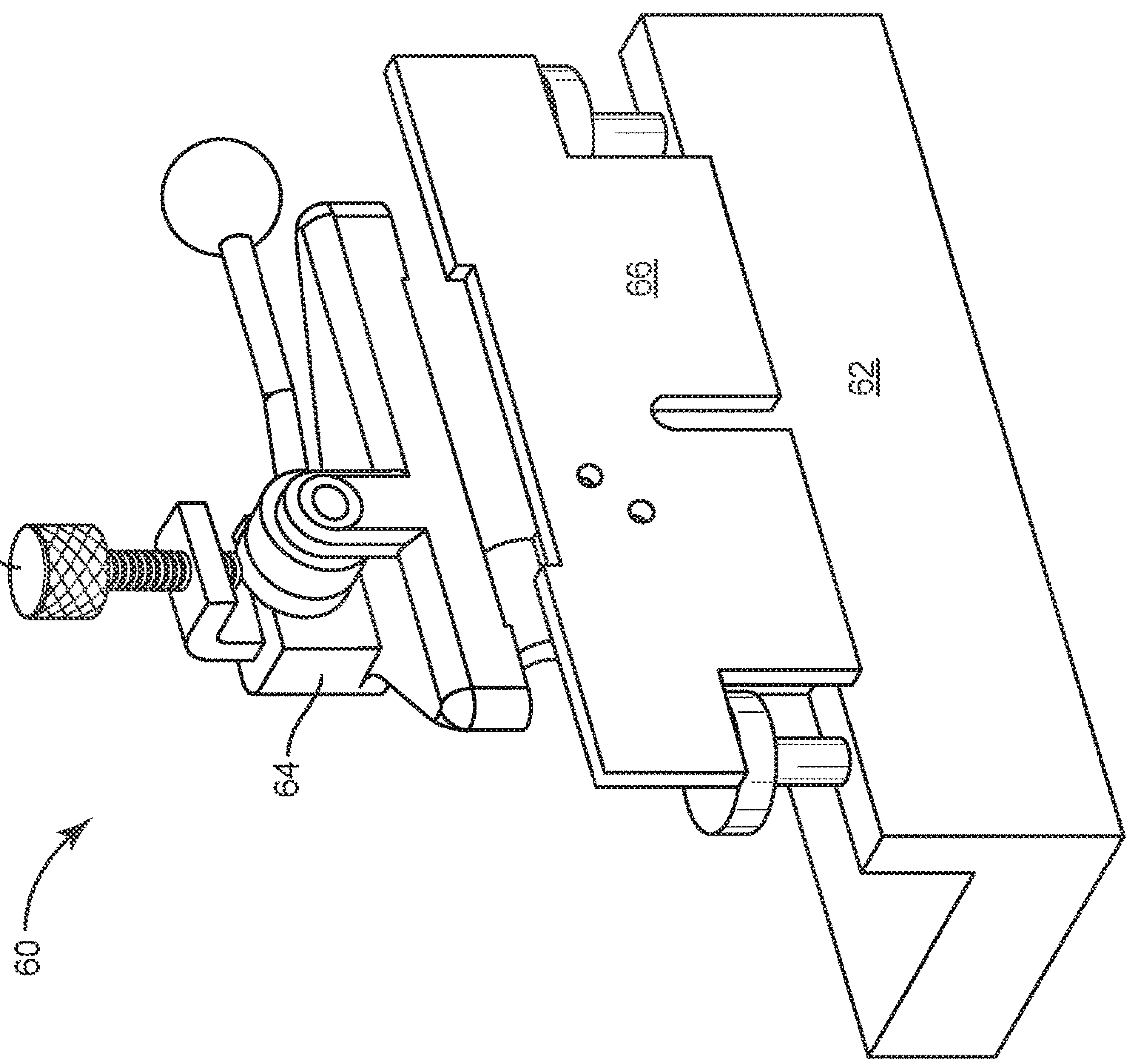

FIG. 3A

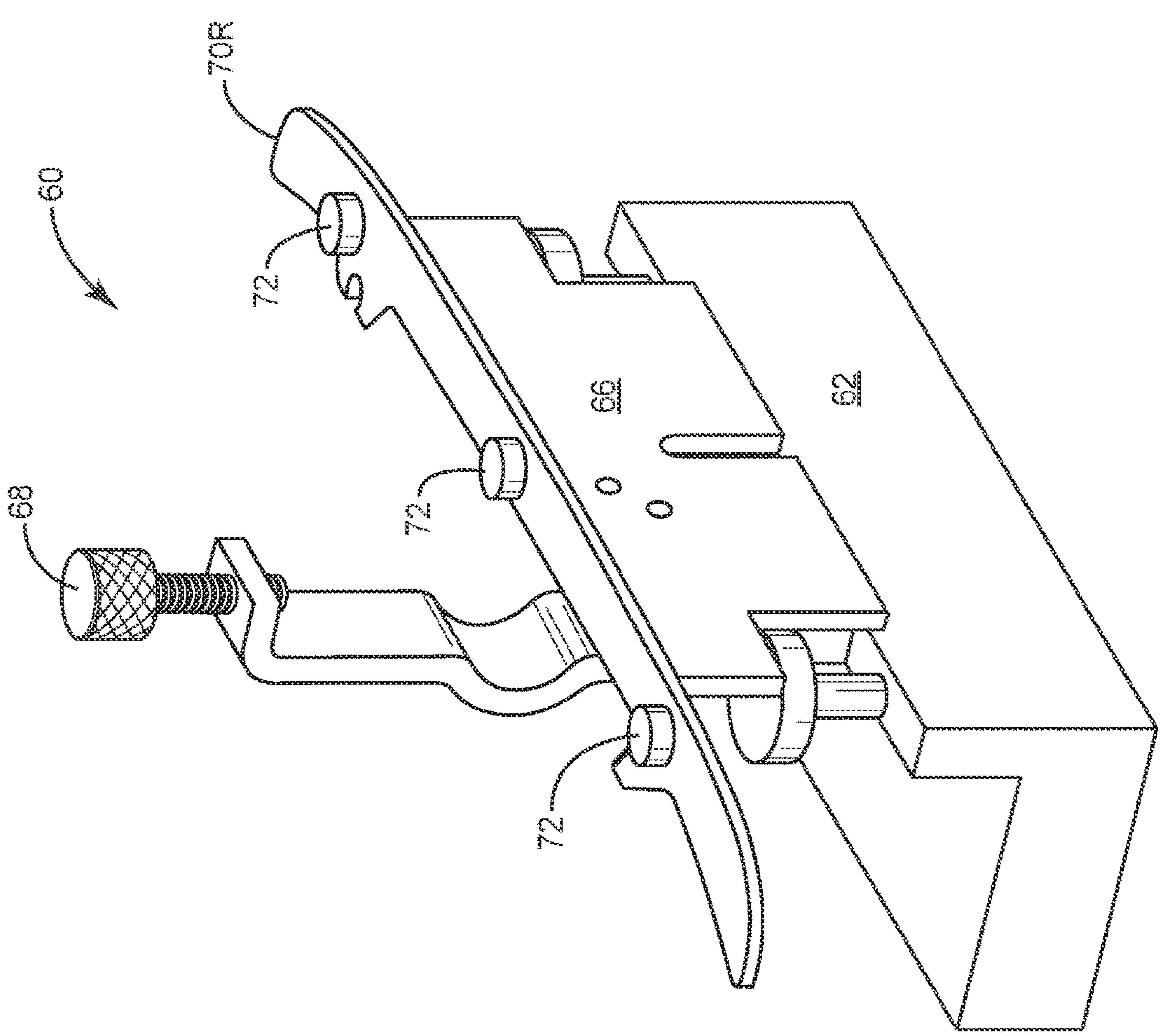

FIG. 3B

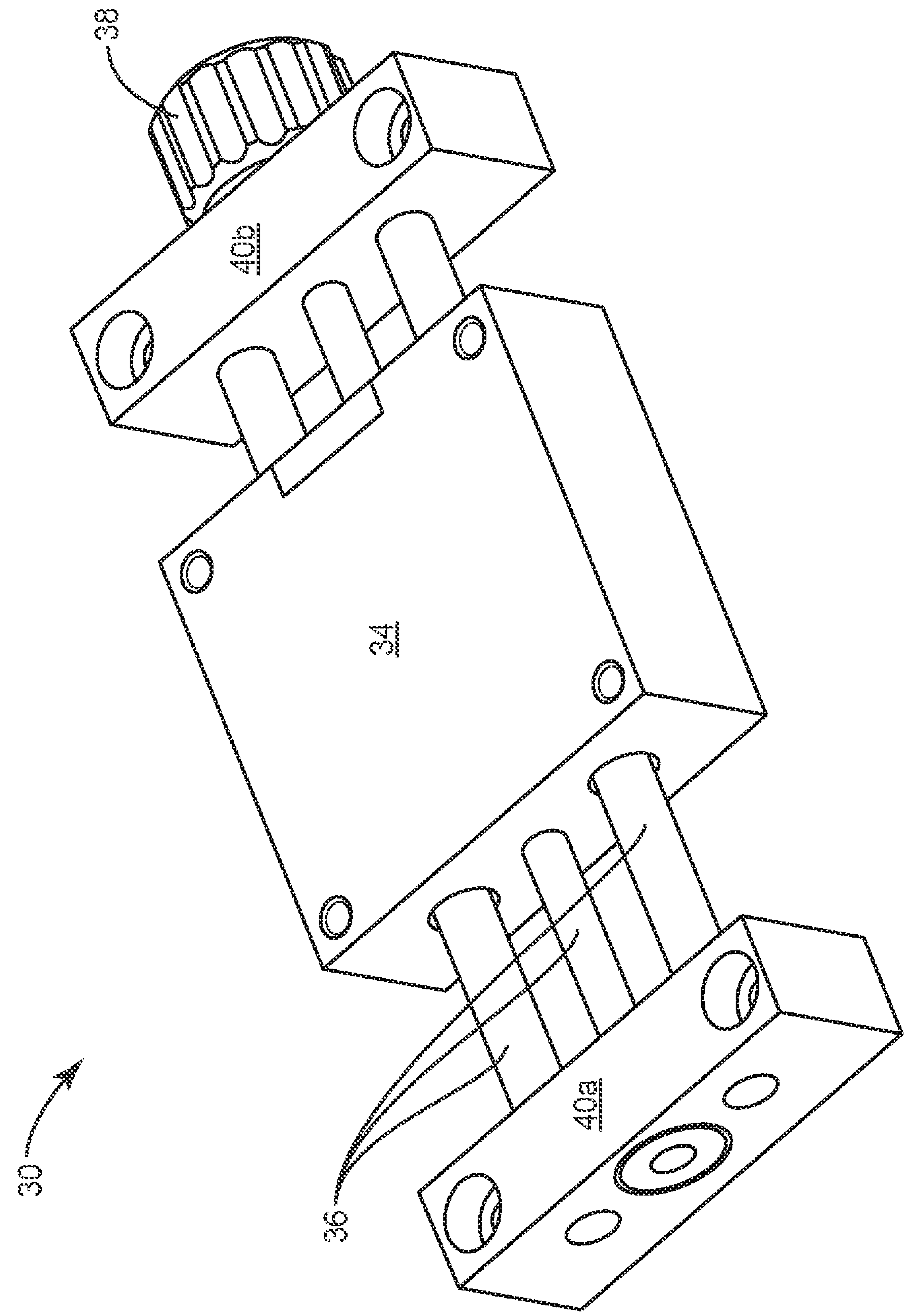

FIG. 4A

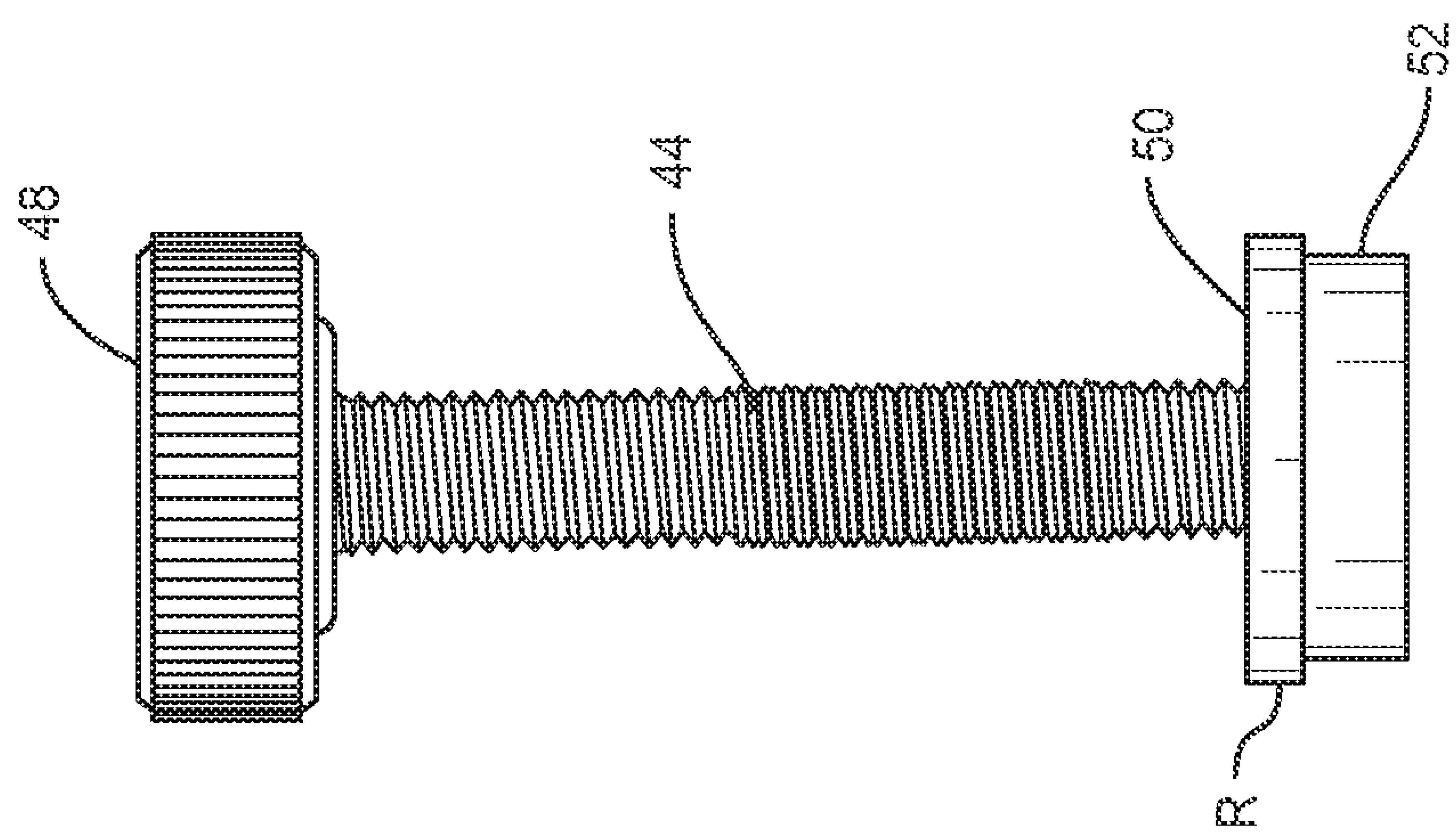

FIG. 4B

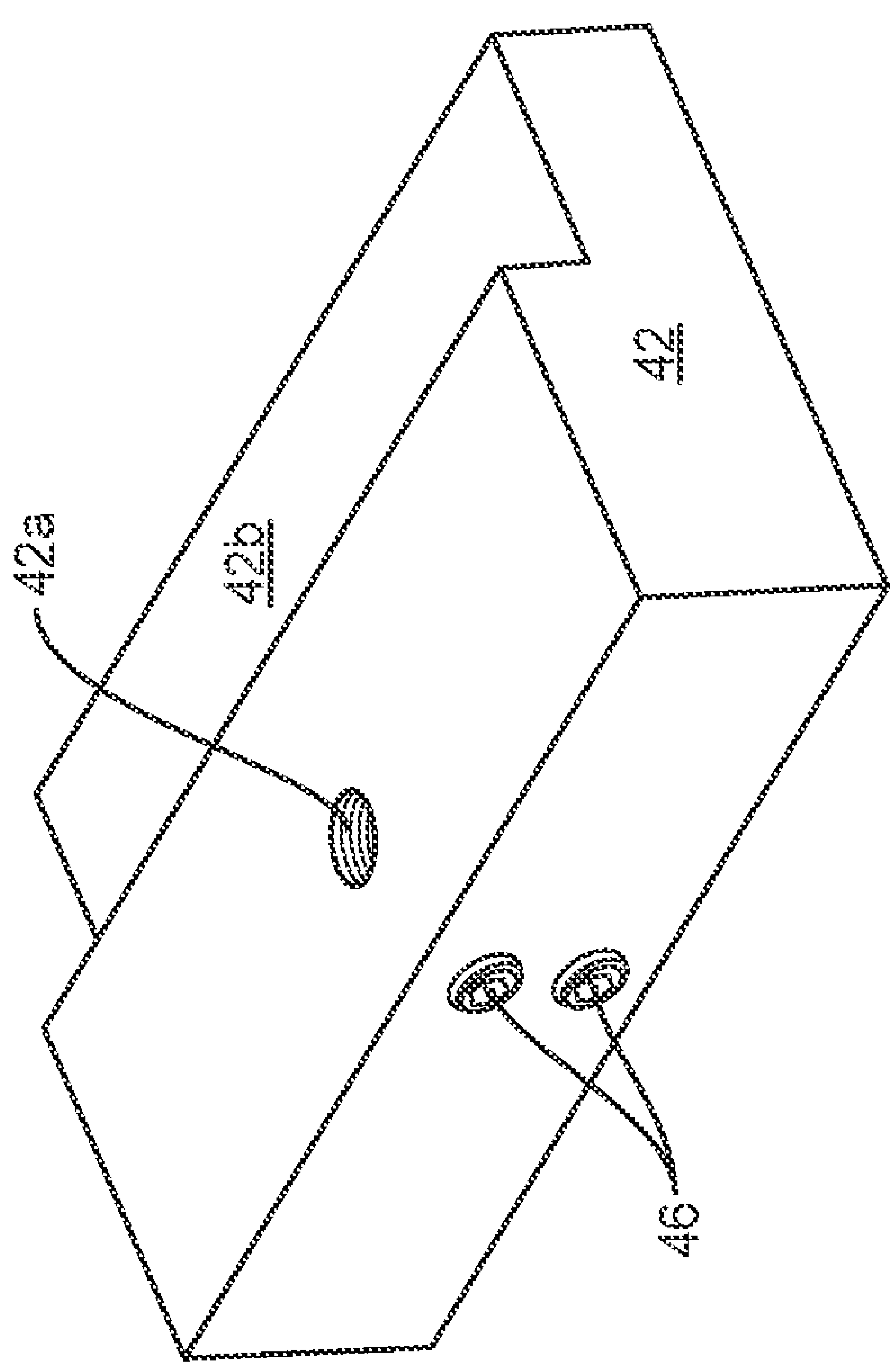

FIG. 4C

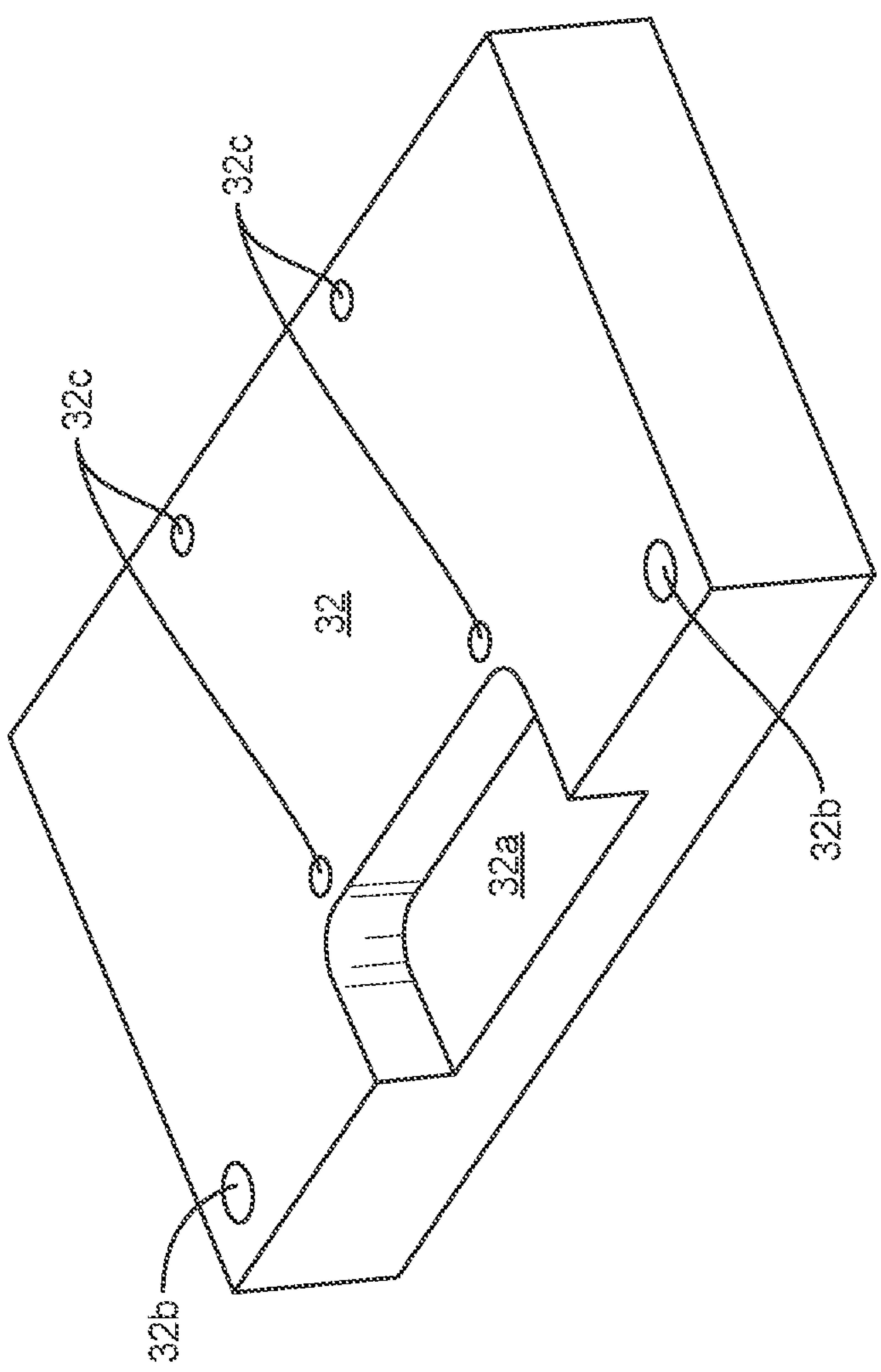

FIG. 4D

SHARPENING SYSTEM FOR ICE SKATE RUNNERS

RELATED APPLICATIONS

This application claims priority to U.S. Provisional Patent Application Ser. No. 62/333,345 filed May 9, 2016, the entire contents of which are incorporated herein by reference.

FIELD OF THE INVENTION

The present disclosure relates systems and devices for sharpening the runners of ice skates.

BACKGROUND

People enjoy ice skating for many different reasons. Some people enjoy recreational skating, while others like to figure skate or play the sport of ice hockey. Regardless of the reason for skating, however, all ice skates have a blade or "runner" functioning as the sole interface between the skater and the ice surface. Additionally, all runners are "profiled" or "contoured," as well as sharpened. The profiling process alters the shape of a runner and defines how much of the runner is in contact with the ice. The sharpening process creates a concave "hollow" along the bottom surface of the runner by grinding metal off the runner. Creating the hollow sharpens the inside and outside edges of the runner.

Conventional systems are only able to sharpen the middle portion of a runner. They are not configured to profile and sharpen substantially the entire length of the runner at the same time.

SUMMARY

The present disclosure provides a method and corresponding system for simultaneously shaping and sharpening a runner for an ice skate. In one embodiment, a template runner is releasably coupled in a spaced-apart relationship to the runner for the ice skate. The template runner defines a selected profile or contour for the runner, and is guided along an adjustable guide bearing disposed a proximate a grinding wheel. While the template runner remains in contact with the adjustable guide bearing, the runner simultaneously remains in contact with the grinding wheel. Thus, guiding the template runner along the guide bearing causes the grinding wheel to simultaneously contour the runner according to the profile of the template runner and sharpen the runner.

In one embodiment, the system comprises a holder assembly, an adjustable guide assembly, and a skate sharpening machine that houses a grinding wheel. A runner to be contoured and sharpened is releasably coupled to a template runner in a spaced-apart relationship and secured by the holder assembly. The template runner defines a selected profile for the runner to be contoured and sharpened. The adjustable guide assembly comprises an adjustable guide bearing that is disposed proximate the grinding wheel. The adjustable guide bearing is configured to guide the template runner as an operator moves the holder assembly. While the template runner is in contact with the adjustable guide bearing, the runner to be contoured and sharpened is in contact with the grinding wheel, such that the grinding wheel simultaneously sharpens the runner, while contouring the runner in accordance with the profile of the template runner.

One embodiment of the present disclosure provides a sharpening machine for skate blades, such as those used for ice skates. In this embodiment, the sharpening machine comprises a grinder housing and an adjustable guide assembly attached to the grinder housing. The grinder housing comprises a grinding wheel configured to sharpen a skate blade releasably clamped in spaced-relation to a template that defines a predetermined profile for the skate blade. The adjustable guide assembly is attached to the grinder housing and comprises a vertically adjustable guide bearing and an adjustable guide block. The vertically adjustable guide bearing is configured to engage and ride along the template while the skate blade is being sharpened. The adjustable guide block is configured to move the guide bearing horizontally relative to the grinding wheel.

In one embodiment, the present disclosure provides a sharpening system for ice skate blades. In this embodiment, the system comprises a clamp assembly, an adjustable guide bearing, and a grinding wheel. The clamp assembly is configured to releasably clamp a skate blade to be profiled and sharpened in spaced-relation to a template. The template defines a predetermined profile to be transferred to the skate blade. The adjustable guide bearing is configured to engage and ride along the template while the skate blade is being sharpened. The grinding wheel is configured to simultaneously sharpen and profile the skate blade in accordance with the predetermined profile of the template.

Of course, those skilled in the art will appreciate that the present disclosure is not limited to the above contexts or examples, and will recognize additional features and advantages upon reading the following detailed description and upon viewing the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIGS. **1A-1B** are perspective views of a sharpening system according to one embodiment of the present disclosure.

FIG. **1C** is a perspective view of a skate holder assembly configured to receive a template runner and a blank runner according to one embodiment of the present disclosure.

FIG. **1D** is a flow diagram illustrating a method of sharpening a blank runner according to one embodiment of the present disclosure.

FIGS. **2A-2C** are perspective views of the sharpening system of the present disclosure from various viewing angles.

FIGS. **3A-3B** are perspective views of a skate holder assembly configured according to one embodiment of the present disclosure.

FIGS. **4A-4D** are perspective views of some exemplary component parts of an adjustable guide assembly configured according to one embodiment of the present disclosure.

DETAILED DESCRIPTION

FIGS. **1A-1B** are perspective views of an ice skate sharpening system **10** configured according to one embodiment of the present disclosure. As seen in FIG. **1**, system **10** comprises a grinder housing or "box" **20**, an adjustable guide assembly **30**, and a skate holder assembly **60**. The box **20** is usually secured to a stable underlying surface S, and houses, inter alia, a motor **22** and a grinding wheel **24** that is oriented substantially horizontally relative to the underlying surface S. Box **20** is typically connected to a power source (not shown), such as an outlet, for example, that provides the motor **22** with the power needed to drive the grinding wheel **24** at a desired revolutions per minute (RPM) that is sufficient with which to sharpen the bottom of a runner.

Those of ordinary skill in the art will appreciate that neither the particular motor **22** that is used, nor the particular grinding wheel **24** that is used, is germane to the present disclosure. Indeed, there are many different types and manufacturers for such boxes **20**, and each may have their own components. However, in one embodiment, the motor **22** comprises a ¾ horsepower (HP) motor that drives the grinding wheel **24** at 3600 RPMs. At this speed, the grinding wheel **24** rotates fast enough to remove thin layers of metal from the runner along the bottom length of the runner. As is conventional, the grinding wheel **24** may be of different diameters, and is releasably attached to box **20** such an operator can replace a worn grinding wheel **24** with a new or different sized grinding wheel **24**.

The adjustable guide assembly **30** fixedly attaches to the top surface of box **20**, and comprises a guide riser block **32**, an adjustable guide block **34**, an adjuster block **42**, and an adjustable fine threaded bearing guide shaft **44**. The guide riser block **32** comprises a solid, unitary piece of lightweight metal or metal alloy, and securely mounts to the top surface of box **20** using, for example, a plurality of mechanical fasteners such as screws or bolts. Once mounted, the guide riser block **32** forms a secure foundation on which to mount the adjustable guide block **34**.

As will be seen in more detail in a later figure, the guide riser block **32** comprises a cutout formed on a top surface. The cutout allows the adjustable guide block **34** to move back and forth relative to the riser block **32** so that the operator can move the adjustable guide shaft **44** relative to the grinding wheel **24**. This is beneficial because grinding wheels **24** often wear from repeated sharpenings, which decreases the diameter of the grinding wheels **24**. The cutout desirably allows the operator to maintain the position of the adjustable guide shaft **44** above the peripheral edge of the grinding wheel **24**. Further, this allows the grinding wheel **24** to be used longer, and thus, the operator need not change the grinding wheel **24** as often as is needed in a conventional sharpening system.

The adjustable guide block **34** comprises one or more adjustor rods **36**, an adjustor control knob **38**, and a pair of terminal end blocks **40***a*, **40***b* (collectively **40**). The adjustable guide block **34** permits an operator of system **10** to move the adjuster block **42** and guide bearing **50** horizontally relative to the riser block **32**.

In this embodiment, a plurality of adjustor rods **36**, such as those seen in FIG. **4**A, extend into and out of the adjustable guide block **34** at generally equidistant positions, although such positioning is not required. One of the adjustor rods **36** connects the adjustor control knob **38** to the terminal end block **40***a*, while the other adjustor rods **36** terminate at, and connect, the terminal end blocks **40***a*, **40***b*. Turning the adjustor control knob **38** in one direction causes the terminal end block **40***a* to move towards the adjustable guide block **34**, while turning the adjustor control knob **38** in the opposite direction will cause the terminal end block **40***a* to move away from adjustable guide block **34**. In this manner, the operator of system **10** is able to adjust the position of the guide bearing **50** relative to the riser block **32**, while maintaining a uniform distance between the bottom surface of the guide bearing **50** and the surface of the grinding wheel **24**.

The adjuster block **42** securely fastens to a bottom surface of the terminal end block **40***a* using, for example, screws or bolts, and comprises a threaded channel (seen later in FIG. **4**C) configured to threadingly receive adjustable guide shaft **44**. A pair of adjustable set screws **46** extends into the threaded channel and allows the operator to lock and unlock the adjustable guide shaft **44** within the adjustment block **42**. Particularly, the adjustable set screws **46** (e.g., set screws) are configured to be tightened and loosened by the operator. When tightened, the adjustable set screws **46** pressingly engage the adjustable guide shaft **44** to ensure that it does not move within the threaded channel of adjustment block **42** once positioned by the operator. This is the locked position. When loosened (i.e., unlocked), the adjustable set screws **46** move away from adjustable guide shaft **44** thereby allowing adjustable guide shaft **44** to move within the threaded channel.

The adjustable guide shaft **44** allows the operator to adjust the guide bearing **50** vertically relative to the top surface of the grinding wheel **24**. Particularly, turning the control knob **48** in one direction causes the guide bearing **50** to move towards the grinding wheel **24**, while turning the control knob **38** in the opposite direction causes the guide bearing **50** to move away from the grinding wheel **24**. The distance between the bottom surface of the guide bearing **50** and the top surface of the grinding wheel **24** can vary based on the separation distance between the runners **70**R, **70**T, the thickness of the runners, and other factors, and may be any distance desired. For example, that distance may be in the range of 1 mm-7 mm However, in one embodiment, that distance is approximately 2.5 mm.

The guide bearing **50** comprises a recess **52**. A ridge R is disposed at one end of recess **52**. As seen in FIG. **1**B, a template runner **70**T contacts recess **52** and a bottom surface of the ridge R when profiling and sharpening the runner **70**R. The guide bearing **50** also rotates freely about the adjustable guide shaft **44** as the template runner **70**T moves horizontally back and forth while profiling and sharpening runner **70**R. The recess **52** and the ridge R prevent the template runner **70**T from riding up the guide bearing **50** during the profiling and sharpening operations.

The skate holder assembly **60**, best seen in FIG. **10**, comprises a base **62**, an upper clamp portion **64**, a lower clamp portion **66**, and a control knob **68**. As seen in FIGS. **1**A-**1**C, the base **62** comprises a unitary block that moves along the underlying surface S as the operator profiles and sharpens the runner **70**R. The template runner **70**T and the runner **70**R are clamped securely between the upper and lower clamp portions **64**, **66**. One or more couplers **72** are disposed between the template runner **70**T and runner **70**R, and function to maintain a uniform separation distance between the two runners **70**R, **70**T.

In this embodiment, the couplers **72** comprise a plurality of magnets. The magnets are disposed at a generally uniform spacing along the template runner **70**T and maintain a uniform distance between the template runner **70**T and runner **70**R. Additionally, in this embodiment, the couplers **72** releasably attach to both the template runner **70**T and the runner **70**R. This allows the operator to move and position the couplers **70**T in any manner desired. However, those of ordinary skill in the art will appreciate that the present disclosure is not so limited. In other embodiments, the couplers **72** are securely affixed to the template runner **70**T. In such embodiments, the template runner **70**T and the couplers **72** are magnetic and formed as a unitary piece with the runner **70**R being releasably attached to the couplers.

As seen in FIG. **1**A-**1**C, the operator first couples the template runner **70**T and the runner **70**R using couplers **72**. The coupled runners **70**T, **70**R are then placed between the upper and lower clamp portions **64**, **66**. The operator then rotates the control knob **68** to tighten the coupled runners **70**T, **70**R tightly between the upper and lower clamp portions **64**, **66**. Once the runners **70**T, **70**R are securely clamped, the operator can bring the template runner **70**T into contact with the recess **52** on guide bearing **50**, as seen in FIG. **1**B. This also brings the runner **70**R to be profiled and sharpened into contact with the grinding wheel **24**. The operator can then move the skate holder assembly **60** along surface S such that the grinding wheel **24** sharpens the runner **70**R.

Conventionally, as stated above, the profiling process and the sharpening process are performed separately. However, such conventional methods require multiple machines (i.e., one machine to profile a runner and another to sharpen the runner after profiling), and thus, also require more time. Additionally, conventional methods are not able to profile and sharpen the entire length of the runner from the toe t of the runner to the heel h of the runner. Rather, they only serve to profile and sharpen a lesser, middle portion of a runner. Further, conventional methods are notoriously prone to operator error. Particularly, the operator may not profile the runner properly. And even if the operator does profile the runner properly, there is a risk that the operator may undesirably, and unknowingly, alter the profile of the runner while performing the separate sharpening process.

Embodiments of the present disclosure, however, reduce these risks by providing the capability for the operator to profile a runner, as well as sharpen the runner, at the same time. Moreover, embodiments of the present disclosure also allow the operator to profile and sharpen substantially the entire length of the runner (i.e., from the toe t to the heel h) instead of just a middle portion, as is done in conventional methods.

In particular, the template runner **70**T is pre-formed by a manufacturer to have a predetermined profile. Such profiles, as is known in the art, may define one or more radii for a runner. Some profiles, for example, may pitch a skater forward, while other profiles help to maintain the skater in a more neutral position. The grinding wheel **24**, as stated above, sharpens the runner. Thus, by attaching the template runner **70**T to a "blank" runner **70**R (i.e., an unprofiled and unsharpened runner), and by moving the template runner **70**T along the recess **52** of guide bearing **50**, as is done in the present embodiments, the blank runner **70**R will be profiled to have the same contour as the template runner **70**T at the same time it is being sharpened by grinding wheel **24**. Further, since both the template runner **70**T and the blank runner **70**R are clamped to the skate holder assembly **60**, and because of the stability provided by recess **52** and guide bearing **50**, the operator is able to move the skate holder assembly **60** along the underlying surface S such that the substantially the entire length of the blank runner **70**R (i.e., from the toe of the runner to the heel of the runner) is profiled and sharpened.

FIG. **1**D illustrates a method for profiling and sharpening a blank runner **70**R according to one embodiment of the present disclosure. As seen in FIG. **1**D, the method comprises:

Step 1: The operator first selects a desired template runner **70**T from among a plurality of template runners **70**T. As previously stated, each template runner **70**T has a unique profile or contour that may be defined by the manufacturer of the template runner **70**T.

Step 2: The operator then releasably attaches the blank runner **70**R to the template runner **70**T using the couplers **72**. As previously described, the couplers **72** may comprise one or more magnets that are evenly spaced along the template runner **70**T. Additionally, the couplers **72** help to maintain a uniform distance between the two runners **70**T, **70**R. The particular distance may be any distance needed or desired; however, the distance is such that the template runner **70**T contacts the recess **52** on guide bearing **50**, and the blank runner **70**R contacts the edge of grinding wheel **24**. This distance may be in the range of 1 mm-7 mm, for example, and in one embodiment, that distance is about 4 mm.

Step 3: The operator then clamps the coupled runners **70**T, **70**R between the upper and lower clamp portions **64**, **66** of the skate holder assembly **60**.

Step 4: Using control knob **48**, the user adjusts the vertical position of the guide bearing **50** relative to the grinding wheel **24**. As stated above, the vertical distance between the guide bearing **50** and the grinding wheel **24** is 2.5 mm in one embodiment. Once the guide bearing is in the desired position, the operator locks the bearing guide shaft **44** into that position using adjustment screws **46**.

Step 5: Using the control knob **38** on the adjustable guide assembly **30**, the operator then adjusts the horizontal position of the guide bearing **50** relative to the riser block **32**. The horizontal position of the guide bearing **50** is such that the template runner **70**T contacts the recess **52** of guide bearing **50** at the same time the blank runner **70**R contacts the grinding wheel **24**.

Step 6: The operator may then begin to profile and sharpen the blank runner **70**R from the toe t to the heel h, as previously described. Specifically, in one embodiment, the operator moves the skate holder assembly **60** towards the box **20** such that the toe t of the template runner **70**T contacts the recess **52** of guide bearing **50**. The bottom surface of the ridge R on guide bearing **50** also contacts the top surface of the template runner **70**T. This helps to stabilize the template runner **70**T during the profiling and sharpening process. The operator then slides the skate holder assembly **60** along the underlying surface S such that entire length of template runner **70**T moves along recess **52** (i.e., from the toe to the heel of the template runner **70**T) while maintaining contact with recess **52**. That is, the recess **52** engages and rides along the template runner **70**T. As the operator performs this motion, the blank runner **70**R simultaneously contacts the grinding wheel **24**, thereby forming the hollow and edges on the blank runner **70**R along the length of the runner **70**R from the toe t to the heel h of runner **70**R.

As those skilled in the art will appreciate, the operator may also slide the skate holder assembly **60** along the underlying surface S such that entire length of template runner **70**T moves along recess **52** from the heel to the toe of the template runner **70**T. Typically, the operator will slide the skate holder assembly **60** in the same direction as the rotation of the grinding wheel **24**. This helps to avoid any uneven surfaces on runner **70**R that may be caused by the grinding wheel **24**. Regardless of the direction in which the template runner **70**T is moved, however (i.e., toe to heel or heel to toe), the template runner **70**T maintains contact with recess **52**, which also ensures an even sharpened and profiled surface on runner **70**R.

FIGS. **2**A-**2**C are perspective views of the system **10** configured according to one embodiment of the present disclosure. Specifically, FIG. **2**A illustrates system **10** from the front and side. FIG. **2**B illustrates system **10** from the rear and side. FIG. **2**C is a perspective view of system **10** as seen from the front and above.

FIGS. **3**A-**3**B are perspective views of the skate holder assembly **60** configured according to one embodiment of the present disclosure. FIG. **3**A illustrates the skate holder assembly **60** without the template runner **70**T and blank runner **70**R clamped thereto. FIG. **3**B illustrates the skate holder assembly **60** with the upper clamp portion **64** removed to show the blank runner **70**R and the couplers **72** that releasably attach the blank runner **70**R to the template runner **70**T.

FIGS. **4**A-**4**D are perspective views illustrating the component parts of the adjustable guide assembly **30**. Specifically, FIG. **4**A illustrates the adjustable guide block **34** including the one or more adjustor rods **36** that extend through the adjustable guide block **34**, the pair of terminal end blocks **40**, and the adjustor control knob **38** that moves the terminal end block **40***a*, via the one or more rods **36**, back and forth horizontally relative to the adjustable guide block **34**.

FIG. **4**B is a perspective view illustrating the adjustable guide shaft **44** in more detail. As seen in FIG. **4**B, the adjustable guide shaft comprises a fine threaded shaft. The guide bearing **50** is fixedly secured to a terminal end of the guide shaft **44**, but still rotates freely about guide shaft **44** with the movement of template runner **70**T. This may be accomplished, for example, by configuring the guide bearing **50** to ride on a plurality of lubricated bearings disposed between the guide shaft **44** and the interior of the guide bearing **50**. The recess **52** and the ridge R formed on the guide bearing **50** are also seen in FIG. **4**B, as is the control knob **38** that is utilized by the operator to alter the horizontal position of the guide bearing **50** relative to the top surface of the grinding wheel **24**, as previously described.

FIG. **4**C is a perspective view of the adjuster block **42** configured according to one embodiment. As seen in FIG. **4**C, the adjustor block **42** comprises the threaded channel **42***a* through which the guide shaft **44** extends, as previously described, as well as a recessed area **42***b*. The recessed area **42***b* is sized and shaped to receive the terminal end block **40***a* to which the adjuster block **42** is fixedly attached using mechanical fasteners, for example. Additionally, FIG. **4**C also illustrates the adjustable set screws **46** that are utilized by the operator to lock and unlock the adjustable guide shaft **44**, and thus, the guide bearing **50**, in a desirable horizontal position relative to the grinding wheel **24**, as previously stated.

FIG. **4**D is a perspective view of the riser block **32** according to one embodiment of the present disclosure. As seen in FIG. **4**D, the riser block **32** comprises a pair of through holes **32***b* that are sized and shaped to receive a pair of corresponding mechanical fasteners m. As previously stated, these fasteners securely affix the riser block **32** to the top surface of the box **20**. So attached, the riser block **32** desirably provides the necessary clearance above the top surface of the box **20** for the adjustor block **42** to move horizontally relative to the grinding wheel **24**. Additionally, however, riser block **32** also includes a recessed receiving area **32***a*. In this embodiment, the recessed receiving area **32***a* is sized and shaped to receive at least a portion of the adjustor block **42** when it is moved towards the riser block **32**.

The riser block **32** also comprises a second plurality of through holes **32***c*. However, the second plurality of through holes **32***c* are sized and shaped to receive another set of mechanical fasteners that securely attach the adjustable guide block **34** to the riser block **32**.

The present disclosure may, of course, be carried out in other ways than those specifically set forth herein without departing from essential characteristics of the disclosure. For example, the previous embodiments illustrate the guide bearing **50** above the grinding wheel. In other embodiments, however, the guide bearing **50** may be disposed below the grinding wheel **24**. In these embodiments, the box **20** may be modified to incorporate at least a part of the adjustor assembly **30**. Therefore, the present embodiments are to be considered in all respects as illustrative and not restrictive, and all changes coming within the meaning and equivalency range of the appended claims are intended to be embraced therein.

What is claimed is:

1. A sharpening machine for skate blades, the sharpening machine comprising:
- a grinder housing comprising a grinding wheel configured to sharpen a skate blade releasably clamped in spaced-relation to a template that defines a predetermined profile for the skate blade; and
- an adjustable guide assembly attached to the grinder housing and comprising:
  - a vertically adjustable guide bearing configured to engage and ride along the template while the skate blade is being sharpened;
  - an adjustable guide block configured to move the guide bearing horizontally relative to the grinding wheel; and
  - a riser block configured to operatively connect the adjustable guide block to a surface of the grinder housing.

2. The sharpening machine of claim **1** further comprising a clamp assembly configured to releasably clamp the skate blade and the template in the spaced relation.

3. The sharpening machine of claim **1** further comprising one or more coupling members disposed between the skate blade and the template and configured to:
- releasably attach the skate blade to the template; and
- maintain the skate blade and the template in the spaced-relation.

4. The sharpening machine of claim **1** further comprising:
- an adjustor block operatively connected to the adjustable guide block, and configured to move horizontally with the guide bearing relative to the grinding wheel; and
- a cutout formed in the riser block, and configured to receive at least a portion of the adjustor block when the adjustor block moves horizontally towards the grinder housing.

5. The sharpening machine of claim **1** further comprising:
- a vertical adjustment control extending through the adjustor block, and configured to control the vertical position of the guide bearing relative to the grinding wheel; and
- a horizontal adjustment control extending through the adjustable guide block, and configured to control the horizontal position of the guide bearing relative to the guide wheel.

6. The sharpening machine of claim **5** wherein the vertical adjustment control comprises a threaded shaft configured to threadingly engage the adjustor block.

7. The sharpening machine of claim **5** wherein the adjustor block comprises one or more locking members configured to lock and unlock the vertical adjustment control, wherein vertical movement of the guide bearing is prevented when the vertical adjustment control is locked, and is permitted when the vertical adjustment control is unlocked.

8. The sharpening machine of claim **1** wherein the guide bearing comprises:
- a recess configured to contact a first surface of the template; and
- a stop formed at one end of the recess, and configured to:
  - contact a second surface of the template that is perpendicular to the first surface of the template; and

inhibit the template from riding up the guide bearing while the skate blade is being sharpened.

9. The sharpening machine of claim **8** wherein the recess is configured to follow the predetermined profile of the template to transfer the predetermined profile to the skate blade while the skate blade is being sharpened.

10. The sharpening machine of claim **1** wherein the adjustable guide block comprises:

first and second terminal end blocks disposed on opposing sides of the adjustable guide block; and

one or more adjustment rods extending through the adjustable guide block and connected at terminal ends to the first and second terminal end blocks.

11. The sharpening machine of claim **10** wherein the first terminal end block operatively connects the adjustable guide block to the guide bearing.

12. The sharpening machine of claim **11** wherein the adjustable guide block further comprises a horizontal adjustment control extending through the adjustable guide block and configured to control a horizontal position of the guide bearing relative to the guide wheel.

13. A sharpening system for ice skate blades, the system comprising:

a clamp assembly configured to releasably clamp a skate blade to be profiled and sharpened in spaced-relation to a template, wherein the template defines a predetermined profile to be transferred to the skate blade;

an adjustable guide bearing configured to engage and ride along the template while the skate blade is being sharpened; and

a grinding wheel configured to simultaneously sharpen and profile the skate blade in accordance with the predetermined profile of the template; and

one or more coupling members configured to magnetically attach the skate blade to the template.

14. The sharpening system of claim **13** further comprising:

a housing configured to house the grinding wheel; and

an adjustable guide assembly configured to adjust one or both of a horizontal and vertical position of the guide bearing relative to the grinding wheel.

15. The sharpening system of claim **14** wherein the adjustable guide assembly further comprises:

an adjustor block operatively connected to the guide bearing;

a vertical adjustment control operatively connected to the adjustor block and configured to vary a vertical position of the guide bearing relative to the grinding wheel responsive to user input;

a horizontal adjustment control operatively connected to the adjustor block and configured to vary a horizontal position of the guide bearing relative to the grinding wheel responsive to user input; and

a riser block operatively connecting the adjustable guide assembly to a surface of the housing and comprising a cutout configured to receive at least a portion of the adjustor block when the adjustor block is moved horizontally towards the housing.

16. A sharpening machine for skate blades, the sharpening machine comprising:

a grinder housing comprising a grinding wheel configured to sharpen a skate blade releasably clamped in spaced-relation to a template that defines a predetermined profile for the skate blade; and

an adjustable guide assembly attached to the grinder housing and comprising:

a vertically adjustable guide bearing configured to engage and ride along the template while the skate blade is being sharpened;

an adjustable guide block configured to move the guide bearing horizontally relative to the grinding wheel, the adjustable guide block comprising:

first and second terminal end blocks disposed on opposing sides of the adjustable guide block; and

one or more adjustment rods extending through the adjustable guide block and connected at terminal ends to the first and second terminal end blocks.

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